

1.0 Introduction

1.1 Purpose

The purpose of this document is to define procedures for periodic preventive maintenance and re-alignment of radiation shielded enclosure doors on the Experiment Hall.

1.2 Scope

This procedure outlines the steps involved when servicing both manual and pneumatic doors, already validated and on an operational beamline. Included in this procedure is the requirement to perform radiation survey of the station based on the work completed.

1.3 Applicability

This procedure is applicable to all persons involved in servicing existing manual and pneumatic doors of enclosures at the Experiment Hall at APS. This service is provided mainly by the original builder contractor Tecknit Shielding, Inc. This procedure also addresses the Floor Coordinators' responsibilities in initiating and managing the work, submitting online Work Order Request (WR), administering configuration controls and documentation.

1.4 References

Tecknit Safety Plan (available upon request from the Tecknit foreman or SSRO Technical Rep.)

Configuration Control Policy

Configuration Control Work Permit (CCWP)

Shielding Service Request Order (SSRO) form and procedure

1.5 Type of Procedure

This document outlines the steps needed for a Floor Coordinator to initiate and manage service on enclosure doors by Tecknit.

2.0 Background

Radiation Enclosures (hutches) installed on the Experiment Hall floor at the APS contains both manual and pneumatic doors. Most of the hutches were installed by Tecknit Shielding, Inc, the main contractor for APS shielding enclosures. In order to keep the hutch doors operational, preventive maintenance and occasional repair services must be provided. Tecknit provides the necessary repairs to these existing stations under warranty, purchase order, or under a blanket purchase agreement for miscellaneous shielding service request order (SSRO). Based on the service performed, the door and the areas around the door may require a radiation survey for verification of shielding integrity.

3.0 Procedure

3.1 Door inspection

Determine whether the door problem is due to mechanical problem or Personnel Safety System (PSS) problem. In most cases, problems with open/close and magnetic locking status issues are due to PSS switch misalignment. These problems must be addressed by the PSS group. Mechanical problems are evident by any one or more of the following: slow movement, rough movement, uneven / stop and go movement, noise and scraping on the bottom or side of the door. These problems are to service by Tecknit.

3.2 Fill out SSRO

Define job description noting observed problems and submit to the SSRO Technical Representative to process. The SSRO Tech Rep. and the Tecknit foreman will further define the details of the repair and schedule the work.

3.3 Submit and get approval for Work Request

Generate CCWP from the approved WR and post on the display case located at the end of beamline. Configuration Control policy is to be followed in all cases. Remove APS Enable from the station being serviced. If required, place beamline Global Offline.

3.4 Define type of work performed by Tecknit

3.4.1. A majority of the door services involve calls for general cleaning and lubrication of the rails and associated hardware. The door position is not changed during this type of work. The rails are wiped clean, visually inspected and lubricated by Tecknit. The carriers are also lubricated. Door controls and pneumatics are checked and adjusted if needed. Further cleaning and inspection are done while noting for proper alignment, motion and possible wear. This type of work does not require that the beamline be Global Offline.

3.4.2. Door services requiring a change in door position require planning and oversight in order to assure that the shielding integrity of the station remains intact. The doors on most stations have been designed with hardware allowing re-alignment in the vertical and inboard/outboard directions. Slotted holes and adjusting screws on the door hangers are to be used by Tecknit to adjust these doors. Only minor adjustments (1 to 2 mm) are to be made and only to address normal settling and minor misalignment of doors. Gross misalignment, requiring large changes in door position need to be addressed specifically and may be the result of other systemic problem. After any change in door position is made, the door trims and backs plates should be adjusted accordingly. Tecknit will note on the SSRO and notify the SSRO Tech Rep. of any door position realignments. This type of work requires that the beamline be Global Offline.

3.5 Verify work

Floor Coordinator will inspect the door/s before closing out the CCWP. Specific attention is to be given if door re-alignment was done. Door trims and other hardware should also be inspected. Normal operation, using PSS controls, should be done by cycling all doors in the station to verify proper operation. PSS fault/s may need to be cleared and a search and secure should be done to check overall operation.

3.6 Radiation Survey and close CCWP

Arrange for radiation survey. Radiation survey is required for all work involving re-alignment of doors. The door and its surrounding areas will be surveyed. If radiation leak is detected, remove APS Enable and inform the APS Assigned Health Physicist. Specific survey instructions and requirements may also be needed as directed by the APS Assigned Health Physicist. CCWP is to be closed out only after obtaining the proper validation and verification signatures. APS Enable and Global Online are restored after the CCWP is completed and verified (or for radiation survey).

3.7 Close SSRO and WR

Change online WR status “completed” and notify CCSM. Also notify SSRO Tech Rep that SSRO work is completed.

4.0 Forms and Documentation

- Miscellaneous Shielding Service Request Order (SSRO)
- APS Work Request Online System
- Configuration Control Policy